

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
18 November 2004 (18.11.2004)

PCT

(10) International Publication Number  
**WO 2004/098875 A3**

(51) International Patent Classification<sup>7</sup>: **C09K 3/14**,  
E21B 10/56, B23B 27/00

(21) International Application Number:  
PCT/US2004/013779

(22) International Filing Date: 3 May 2004 (03.05.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/467,311 2 May 2003 (02.05.2003) US

(71) Applicant (for all designated States except US): **DIA-  
MOND INNOVATIONS, INC.** [US/US]; 6325 Huntley  
Road, Worthington, OH 43085 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **WAN, Shan** [CN/US];  
8413 Oak Village Boulevard, Lewis Center, OH 43035  
(US).

(74) Agent: **SINGER, James, M.**; Pepper Hamilton LLP, One  
Mellon Center, 50th Floor, 500 Grant Street, Pittsburgh,  
15219 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,  
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
GW, ML, MR, NE, SN, TD, TG).

**Published:**

- with international search report
- before the expiration of the time limit for amending the  
claims and to be republished in the event of receipt of  
amendments

(88) Date of publication of the international search report:  
27 January 2005

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: POLYCRYSTALLINE DIAMOND TOOLS AND METHOD OF MAKING THEREOF

(57) Abstract: The present invention is a tool insert. The tool insert includes a abrasive layer and a substrate. The abrasive layer has a periphery forming a cutting surface and is located on the substrate. The abrasive layer includes at least one of polycrystalline diamond or cubic boron nitride. The abrasive layer tool insert has a sum value of an impact resistance number and an abrasion resistance number that is  $\geq 19,000$ . The impact resistance number is equal to a total number of hits before failure of the tool insert. The abrasion resistance number is equal to equation (1) (1) abrasion resistance = final volume of granite removed by the tool insert (inch<sup>3</sup>)/final tool wear land area (inch<sup>2</sup>).

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/013779

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C09K3/14 E21B10/56 B23B27/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 E21B C09K B23B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, COMPENDEX, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 855 996 A (CORRIGAN FRANCIS RAYMOND ET AL) 5 January 1999 (1999-01-05) cited in the application whole document, in particular the examples and figs.1a-c, claim 1	1-21
X	EP 0 352 811 A (NORTON CO) 31 January 1990 (1990-01-31) whole document, but in particular, p. 6, 1.10-15 and 1.24-33, and example 8	1-21
X	US 4 604 106 A (HALL DAVID R) 5 August 1986 (1986-08-05) whole document, but in particular the examples	1-7
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

30 November 2004

Date of mailing of the international search report

13/12/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5816 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax (+31-70) 340-3016

Authorized officer

Munro, B

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International Application No  
PCT/US2004/013779

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 096 465 A (CHEN SY-HWA ET AL) 17 March 1992 (1992-03-17) column 4, line 44 - line 65; claims 11-16; example 3 column 7, line 35 - line 64 -----	1-7, 12-14
P,X	WO 2004/000543 A (PHOENIX CRYSTAL CORP) 31 December 2003 (2003-12-31)  whole document, in particular examples and figure 4 -----	1-7, 9-14, 16-21
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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